

We claim:

1. A method for identifying substances that alter the interaction of a presenilin protein with a presenilin-binding protein, comprising:
  - (a) contacting at least the interacting domain of a presenilin protein to a presenilin-binding protein in the presence of a test substance, and
  - (b) measuring the interaction of the presenilin protein and the presenilin-binding protein.
2. The method of claim 1, wherein said interacting domain is mutated relative to the interacting domain of a normal PS1 protein.
3. The method of claim 1, wherein said interacting domain comprises amino acid residues from about 260 to about 409 of a mutant PS1 protein.
4. The method of claim 1, wherein wherein said interacting domain comprises amino acid residues from about 372 to about 399 of a mutant PS1 protein.
5. The method of claim 1, wherein said interacting domain comprises amino acid residues from about 266 to about 390 of a mutant PS2 protein.
6. The method of claim 1, wherein wherein said interacting domain comprises amino acid residues from about 350 to about 380 of a mutant PS2 protein.
7. A method for identifying substances that modulate the nuclear translocation of an *armadillo* protein, comprising:
  - (a) providing a culture of cells that express said *armadillo* protein and a mutant presenilin protein, or a functional fragment thereof that binds said *armadillo* protein;

(b) contacting said culture with a test substance;  
(c) inducing nuclear translocation of said *armadillo* protein in said cells; and  
(d) measuring levels of nuclear *armadillo* protein as compared to a control  
as an indication of modulatory activity of said test substance.

8. The method of claim 7, wherein said *armadillo* protein is  $\beta$ -catenin.

9. The method of claim 7, wherein said *armadillo* protein is hNPRAP.

10. The method of claim 7, wherein said *armadillo* protein is p0071.

11. The method of claim 7, wherein (c) comprises culturing said cells in the presence of a lithium salt.

12. The method of claim 7, wherein said mutant presenilin protein comprises amino acid residues from about 260 to about 409 of a mutant PS1 protein.

13. The method of claim 7, wherein said mutant presenilin protein comprises amino acid residues from about 372 to about 399 of a mutant PS1 protein.

14. The method of claim 7, wherein said mutant presenilin protein comprises amino acid residues from about 266 to about 390 of a mutant PS2 protein.

15. The method of claim 7, wherein said mutant presenilin protein comprises amino acid residues from about 350 to about 380 of a mutant PS2 protein.

16. The method of claim 7, wherein said cells are selected from the group consisting of fibroblasts, leukocytes, neuronal cells, human embryonic kidney cells and *D. melanogaster* cells.

17. The method of claim 7, wherein said control comprises cells expressing a wild-type presenilin and said *armadillo* protein.

18. A method for screening individuals for presenilin alleles associated with Alzheimer's Disease or related disorders, comprising:

(a) obtaining cells from an individual to be tested for Alzheimer's Disease or a related disorder;

(b) inducing nuclear translocation of an *armadillo* protein in said cells; and

(c) measuring levels of said nuclear *armadillo* protein as compared to a control as an indication of the presence or absence of presenilin alleles associated with Alzheimer's Disease or a related disorder.

19. The method of claim 18, wherein (b) comprises culturing said cells in the presence of a lithium salt.

20. The method of claim 18, wherein said control comprises cells that express normal presenilin and said *armadillo* protein.

21. The method of claim 18, wherein said *armadillo* protein is  $\beta$ -catenin.

22. The method of claim 18, wherein said *armadillo* protein is hNPRAP.

23. The method of claim 18, wherein said *armadillo* protein is p0071.